

## **ABSTRACT**

*PT. Bintang Kanguru is a manufacturing company engaged in textile raw materials of cotton yarn and blended yarn into the base material T-shirts and polo shirts. In the last seven years of production at the company recorded a decline of 10-25 percent. In the existing conditions of production floor layout there are facilities that have not been efficient and also the presence of backtracking. That caused the company's production costs are rising.*

*This study used two different methods namely CRAFT algorithm as an algorithm of development and PLANET algorithm as an algorithm of construction. Tools that are used in implementation of CRAFT algorithm is use WinQSB software in otherwise on PLANET algorithm used tools that will be designed to support the concept PLANET algorithm.*

*In this research obtained the designed layout is more optimal marked by the total cost reduction about 19,5% by using CRAFT algorithm. Meanwhile total cost of the PLANET algorithm is 66,4%. So it can be concluded that the smallest material handling costs and capable of minimizing the total production cost of the company is using the algorithm PLANET.*

**Keywords:** *Layout, CRAFT algorithm, PLANET algorithm*